ACC.11
60th Annual Scientific Session & Expo

E877
JACC April 5, 2011
Volume 57, Issue 14

IMAGING AND DIAGNOSTIC TESTING

INCREASED EPICARDIAL ADIPOSE TISSUE IS ASSOCIATED WITH CORONARY ARTERY DISEASE AND MORTALITY

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
Tuesday, April 05, 2011, 9:30 a.m.-10:45 a.m.

Session Title: Epicardial Fat, Bone Mineral Density and Coronary Calcium: A Pathogenetic Role for Atherosclerosis?
Abstract Category: 37. CT Coronary Calcium and Noncoronary CT Applications
Session-Poster Board Number: 1169-208

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Background: We recently reported that increased epicardial adipose tissue (EAT) is associated with the presence and severity of subclinical atherosclerosis. This study investigates the long term clinical outcome of subjects with and without increased EAT.

Methods: Two hundred and forty five subjects aged 61±9 years, 34% women, underwent computed tomography angiography (CTA) and were followed prospectively. EAT, adipose tissue inside pericardial sac, was measured from slice level 15 mm above to the bottom of the heart. CTA diagnosed coronary artery disease (CAD) was defined as luminal stenosis≥50%.Major adverse cardiac event (MACE) was defined as myocardial infarction or cardiovascular death.

Results: EAT increased significantly from subjects without CAD (93±37) to subjects with CAD (190±49) (P=0.01). During the 30 month follow up, the event rate was 8.6% (21). The event free survival rate decreased significantly from 99% in the highest quartile to 86.6% in the lowest quartile of EAT. After adjustment for risk factors, the relative risk of MACE was 1.4, 3.1 and 5.7 in lower mid, upper mid and highest quartiles of EAT as compared to lowest quartile of EAT.(P<0.05) (Table)

Conclusion: Increased epicardial adipose tissue is directly associated with coronary artery disease and predicts MACE independent of the age, gender and conventional risk factors.

Model	Lowest Q EAT	Lower Mid Q EAT	Upper Mid Q EAT	Highest Q EAT
Event Free Survival	99%	96.7%	88.6%	86.6%
Relative risk of MACE (95% CI) across quartiles of EAT*				
CDI	1.0 (Ref)	1.4 (1.2-4.2), p=0.01	3.1(1.4-6.9), p=0.008	5.7(1.6-9.8), p=0.001

Q: Quartile
*Adjusted for age, gender and conventional risk factors